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### III.—FINAL *AS* BEFORE SONANTS IN SANSKRIT.

*Prefatory Note*.:—The substance of this article was presented in a paper read before the American Oriental Society at its meeting in New Haven, October 26, 1881; and a concise report was published in the "Proceedings" of that meeting (pp. iv-vii), under the title: "On non-diphthongal *e* and *o* in Sanskrit." A renewed investigation of the subject has served not only to support and clarify the views which were then expressed upon much less extensive data, but has also, it is believed, brought out some new facts which deserve notice; and I am thus led to present the subject anew, and in a fuller form than a report in the "Proceedings" will permit of.

That the value of Sanskrit *e* and *o* is usually correctly defined by the statement that they represent original diphthongs, is clear and universally accepted. These diphthongs reach back either to the period of the common life of the family, in cases like *é-mi* =  $\epsilon\acute{\iota}\mu\iota$ ; *ri-réc-a* =  $\rho\acute{\iota}\rho\epsilon\kappa\alpha$ ; optative *bhāre-ta* =  $\beta\acute{\eta}\rho\alpha\iota\tau\epsilon$ ; genitive *sūnos* = Gothic *sunaus*; or they are still more evidently diphthongs when they are direct results within Sanskrit itself of the meeting of an *ā* with *i* or *ū*.

To the Hindu grammarian *e* and *o* are always diphthongs; he knows no exception. When final *as* changes to *o* before a sonant consonant he either assumes with unrelaxing consistency that the *s* has in some way or other been supplanted by *u* and that this *u* has then united with the preceding *a* to the diphthong *o* (Atharva-Prāti-ṣākhya I 53-4; Pāṇini VI, 1, 113-4), or, what amounts to the same thing, final *as* as a whole has changed to *o* the diphthong (Ṛk-Prāt. IV 8; VS-Prāt. IV 41, 42; Tāittirīya-Prāt. I 9); cf. Weber, Kuhn und Schleicher's Beiträge III 391 fg. This is the extremest case; still less do they think of regarding an *e* or *o* in other surroundings as anything else than a diphthong.

The older European grammarians (Bopp, Lassen, etc.) accepted the Indian view with regard to *e* and *o* with little or no modification; and whatever scepticism has cropped out here and there since Bopp has not been strong enough to procure distinct recognition,

in any connected grammatical treatise, for a value other than diphthongal. If it is remembered how the opinion that Sanskrit *a* is everywhere an original *a*-sound, and everywhere the same sound, has gradually been undermined within the last few years, *a priori* scruples against an attack upon the singleness of the character of *e* and *o* will be easily laid aside, even if it be possible to establish a non-diphthongal value only in isolated cases.

In the first place it is impossible to extend the diphthongal explanation to the *e* of the so-called contracted weak perfect stems, stems like *sed-* in *sed-imā*; *men* in *men-ē*, etc. For the following reason: The type of these weak perfects is older than the beginning of the separate life of the Indian languages, it goes back to the common Indo-European period, and any explanation of it made for Sanskrit alone is insufficient; therefore, if the *e* in forms like these is explained as a diphthong, this same explanation must hold good for all other languages which exhibit this kind of weak perfect stems. This is not the case. The history of this type may perhaps be most justly presented by the following short sketch: The Indo-European perfect was non-thematic, and possessed that distinction between strong and weak stems which is so admirably preserved in Sanskrit and German. The singular active of the perfect was made with strong root-forms, accompanied by the tone on the root-syllable (*ri-réc-a*); the other numbers of the active, the entire middle and the participle were formed with weak root-forms accompanied by the tone on the suffix (*ri-ric-mās*, *ri-ric-vāmsam*, etc.). In the case of the root *sad*, and possibly one or two others, the weak stem became subject to euphonic changes which resulted in the form *sēd-*. The strong form was *\*sē-sód-*; the weak *\*sē-sd-* ː; here the inner *s* became sonant before the sonant *d*: *\*sē-zd*; sonant *z* fell out, leaving behind it only its 'voice' (stimm-ton) which *lengthened* the preceding *ē*, leaving *sēd-* as the result. This *sēd* has survived in Sk. *sēd-imā* (: *sa-sād-a*); Gothic *sēt-um* (: *sat*), and Lat. *sēd-imus*; in Latin the weak stem supplanted the strong, and we have *sēd-i* for *\*sē-sod-i* in the singular also. This explanation of *sēd-* finds support in the perfectly parallel history of the present stem belonging to the same root: Sk. *sīd-ati*, Zend *hīd-aiti*, Lat. *sīd-it*; these words represent a reduplicated thematic present-formation *\*sī-sd-a-ti* (like Vedic *pī-bd-a-*, *jī-ghn-a-*; Greek *μῑ-μν-ω*, etc.), where the *s* of the root coming before the sonant *d* was changed into *z* (*\*sī-zd-*); this *z* fell out and its voice again lengthened the preceding *ī* to *ī̄*.

This explanation of the type *sēd-* emanates from Delbrück, *Altindisches Verbum*, p. 118, and it has been presented with minor variations by Scherer, *Zur Geschichte der deutschen Sprache*,<sup>2</sup> 232 fg.; Joh. Schmidt, *Kuhn's Zeitschrift* XXV 60 fg.; Kluge, *Beiträge zur Geschichte der germanischen Conjugation*, 59 fg.; De Saussure, *Mémoire*, p. 12, note, and others<sup>1</sup>; this *ē* definitely breaks the singleness of value of Sk. *e*, and forms a safe basis for a renewed investigation of Sk. *e* and *o* in general.

In the type *sēd* there presents itself an Indo-European long *ē*, originated before the separation of the languages; there are a number of cases in which the same explanation of *e* as long non-diphthongal *ē* must be urged for the period of the separate life of Sanskrit. Such forms are the imperatives *ē-dhí* for *\*ēz-dhí* (*\*ēs-dhí*); *dē-hí* and *dhē-hí* for *\*dēz-dhí* and *\*dhēz-dhí* = Zend *dazdi* (for both); here again the *ē* is simple long *ē* the result of short *ē* plus the tone of a sonant sibilant which has itself fallen out; probably the same explanation holds good for the forms *nēdiyaṃs* and *nēd-iṣṭha* = Zend *nazdyō* and *nazdista*; *mēdha*; Zd. *mazda*; *miyēdha*; Zd. *myazda*; *trṇēdhi* for *\*trṇē(ṣ)h-ti* and a few others of a less transparent character which are mentioned by Joh. Schmidt, KZ. XXV 61-62.

The assumption of long *ē* is supported by the numerous cases in which long *ī* and *ū* are the results of short *i* and *u* and the same voice, which a sonant has left as compensation on falling out. The case of *sīdati*, Zd. *hīdaiti*, Lat. *sīdit*, has been mentioned above; it is the only case which dates back to Indo-European times; within Sk. itself *mīḍhāt* = *μισθός*; *nīḍā* for *\*nī-ṣḍā* for *\*nī-sḍā* and *līḍhāt*, perfect participle of *li(ṣ)h* are examples; for *vīḍu*, which Max Müller has connected with *\*Ιλιον*, I suggest affinity with Lat. *viridis* (for *\*vis(i)duis*?), so that the *ī* in *vīḍu* is again the result of short *i* lengthened by the voice of a sonant sibilant which has fallen out. It is hardly necessary to point out the familiar cases in which a *ū* has been lengthened in the same manner, e. g. in the participles *ūḍhāt* for *\*uṣḍhāt* from root *va(ṣ)h*; *dūḍābha* for *\*dūṣḍābha*; *dūṣṭāca* for *\*dūṣṭāca*, etc.

The testimony which has been brought forward seems to point to the following thesis: Long vowels in Sk., when due to compensatory lengthening, are results of the corresponding short vowel

<sup>1</sup> The strongly deviating view of Fröhde in Bezzenger's *Beiträge* VI 192, fg. is hardly calculated to overthrow this explanation.

plus the voice of the sonant, which has fallen out ; in accordance with this thesis, long  $\bar{e}$ ,  $\bar{i}$  and  $\bar{u}$  have been generated from their respective short vowels, as we have seen, and by the light thus gained we can now approach to better advantage the  $\bar{o}$ , resulting from compensatory lengthening.

The unique word for 'sixteen'  $\$̌\bar{o}-\bar{d}a\bar{c}a$  (cf.  $\$̌\bar{o}-\bar{d}h\bar{a}$  'sixfold') is especially interesting because it is so different in form from all the numerals with which it could be mentally associated, and numerals are notoriously subject to the workings of analogy ; other forms containing the element for 'six,' or surrounding numerals for other numbers, cannot have developed the  $\bar{o}$  inorganically after their analogy ; the change of  $\$̌a\bar{s}$  into  $\$̌\bar{o}$ - is a phonetic one. If we look at the usual forms in Europe ( $\xi\bar{\xi}$ , *sex*) we should expect  $*\$̌\bar{e}-\bar{d}a\bar{c}a$  for  $*\$̌\bar{e}\bar{z}-\bar{d}a\bar{c}a$  (the cerebral  $\$̌$  at the end and its alterant effect upon the following  $\bar{d}$  being due to the  $k\bar{s}=\bar{\xi}$ , which must have preceded the  $\$̌$ ) ; there remains then the explanation of the  $\bar{o}$  instead of the  $\bar{e}$ . That this is due to the  $v$  of Zend *khshvas* and Armenian *vez*, the  $F$  of  $F\varepsilon\bar{\xi}$  of the Heraklean tablets and the  $w$  of Cymric *chwech*, which point to an original form  $*sveks$ , seems extremely probable. We must start in the explanation of the Sanskrit form from a pronunciation of the word, which may be rendered into writing well enough by  $*\$̌\bar{o}\bar{s}$  ;  $*\$̌\bar{o}\bar{s}-\bar{d}a\bar{c}a$  had to become  $\$̌\bar{o}-\bar{d}a\bar{c}a$  in perfect parallelism with  $\bar{d}\bar{u}-\bar{d}abha$ , etc. ; the  $\bar{o}$  of  $\$̌\bar{o}-\bar{d}a\bar{c}a$  is simple long  $\bar{o}$  not a diphthong precisely as the  $\bar{e}$  of  $\bar{e}dh\bar{i}$ ,  $\bar{d}\bar{e}h\bar{i}$ , etc.

The explanation of a few peculiar nominatives in the RV. leads to the same kind of formation as is exhibited in  $\$̌\bar{o}-\bar{d}a\bar{c}a$ . They are *ava-yās* from stem *ava-yāj* ; *puro-dās* from a stem *puro-dāc*, and the grammarians add a nominative *çvetā-vās* and a corresponding vocative *çveta-vas* from stem *çveta-vāh* ; in all three cases the stem ends in gutturals of the front (or palatal) series :  $\bar{c}$ ,  $\bar{j}$ ,  $\bar{h}$ . Joh. Schmidt, *Die Verwandtschaftsverhältnisse der indogermanischen Sprachen*, p. 11, 12, explains these forms as the result of phonetic union of the ending of the nominative  $s$  with the final of the stem. This explanation is untenable for two reasons : First, it operates with  $s$  of the nom. as though it were an element still alive within the special language ; but the special language of the Indo-European family has no such element at its command ; a form like *avayās* must be either a heritage from the common period, which no one will believe, or it is an analogical formation. Secondly, even if we were to admit the separate existence of the  $s$  of the nominative in the individual language, there is no reason why in these special few

instances there should be an exception to the Indian law for finals ; according to this the *s* would fall off and leave *t*<sup>1</sup>: \**avayāt*, etc. Indeed it will be found an impossible task to obtain phonetically nominatives like *avayās*, *puroḍās* and *ṣvetavās* from their respective palatal stems, and only the analogy of some form within the paradigms of these forms can have originated them. A full paradigm of *avayaj* would be : Singular, nom. *avayāt*; acc. *avayājam*; genit. and abl. *avayajās*, or possibly with *samprasāraṇa*: *avejās*; Loc. plur. *avayatsū* or *avayatsū*; from all these the nom. sg. *avayās* could not be the analogical offspring. Thus far the *bh*-cases have not been mentioned; they are indeed not quotable. That such forms must however have existed in the language is self-evident, and the grammarians are unanimous in reporting: *avayobhis*, *puroḍobhis*, and *ṣvetavobhis*; these forms can be organic in the following manner: We find that root-stems which have long *ā* in the strong cases often show *ā* in the weak ones; that this short *ā* is probably the representative of *ō*, or equal to *ō*, is shown by Greek declensions like *χθών*: *χθονός*: *χρώς*: *χρούς*; *σώ-φρων*: *σώ-φρονος*; *φλόξ*: *φλόγος*; *ὄψ* to *ὀπός*<sup>2</sup>; assuming then for

<sup>1</sup> Or indeed possibly dental *t* with still further assimilation. Such cases are contained in the form *prayātsu*, locative plur. (TS. iv. 1. 8; VS. xxvii. 14); AV. has *prayāksu* which is evidently secondary. In the same direction points *anaḍūtsu*, the locative pl. of *anaḍvāḥ* (RV.); this is the only phonetically correct form of the stem which shows a dental before a case-ending, and from this the *t* has spread over the other cases. According to the proportion *vidvādbhyas*: *vidvātsu*, the strange *anaḍvādbhyas* (AV.) was formed upon *anaḍūtsu*. Possibly the curious form with dental *t* belonging to a palatal stem, nominative *paṣṭhavāt* from a stem *paṣṭha-vūh* (*paṣṭhavād vāyo* TS. 4. 3. 3. 2 etc.), which is cited by Weber, Indische Studien XIII. 107, owes its existence to a locative form \**paṣṭhavatsu*, which is to be sure not quotable; the archaic character of this *t* in the TS. is made probable by the fact that the same Sāmhitā has preserved the form *dsṛt* (vii 4. 9) instead of the common but difficult *dsṛj*; *dsṛt* stands to *yakṛt* (or \**yākṛt* in *yākare*: Old Zend-Pehlewi Glossary) precisely as Cypriot *ἐ(σ)αρ*=*εἶαρ* does to *ἦπαρ*; both have stems in *n* for the oblique cases: *yaknas* (whence perhaps the *ā* of *yakṛt*)=ἦπατος and *asnds*; cf. *ḡdkṛt*: *ḡaknds*. The *t* is 'inorganic' as is shown by Iranian *yākare* and the derivative *asra*; it is the same *t* which appears at the end of root-nouns ending in short vowels: *vajra-bhṛt*, etc.; *j* in the same function is an anomaly. Is not a *dsṛj* a perversion by popular etymology (volksetymologie)? *√srj*+*ā* means 'to pour,' etc.

<sup>2</sup> In *φλόξ*: *φλογ-ός*, and *ὄψ*: *ὀπός* the weak form has penetrated into the nominative; the old declension was \**φλώξ*: *φλογ-ός*, etc.; the long vowel has supplanted the short in *σκάψ*: *σκαπός*; *κλώψ*: *κλωπός*; *ὦψ*: *ὦπός* (cf. *οἶνοψ*); *πτῶξ*: *πτωκός*; *φῶρ*: *φωρός*; *φῶς*: *φωτός*; *θῶψ*: *θωπός*; in these the old accentual difference is still preserved; in *παρα-βλώψ*: *παρα-βλωπός*; *χειρο-βρώς*: *-βρωτός*; *δια-ῥρώξ*: *δια-ῥώγος* both vowel and accent of the nominative have penetrated into the oblique cases; for the historical *ποιός* (Dor. *πῶς*): *ποδός* Joh. Schmidt KZ. xxv, 15 has rendered an older declension *πῶς* (\**πῶς*): \**πεδός* very probable.

the *bh*-cases: \**ava-yōṣ-bhis*, *puro-ḍṣ-bhis* and *ṣveta-vṣṣh-bhis*, the sonant sibilant has, as in *ṣō-ḍaṣa* fallen out and compensated the short *ō* by lengthening it into *ō*. Forms like these, and as far as can be seen only forms like these, could give rise to nominatives like those of *as*-stems: *avayās*, etc., on the basis of a proportion like *āṅgīrobhis*: *āṅgīrās*=*avayobhis*: *avayās*; the grammarians offer also locative pl. *avayaḥsu*, etc., which is due no doubt to the same analogy. I am aware of course that under common circumstances it would be more natural to suppose that the *bh*-cases are due to the afterthought of the grammarians; but this would leave the nominatives a riddle. I add that the nom. sg. *sadha-mās* (RV. vii. 18. 7) by the side of *sadha-mād* (iv. 21. 1) cannot be explained with any kind of certainty even as an analogical formation, and only emphasize the fact that an organic explanation, such as would assume \**sadha-mād-s* as an original form is not to be thought of.<sup>1</sup>

Beset with difficulties are the formations with *ō* from the roots *vah* and *sah*; stems: *voḍhu-* and *voḍhar-* (RV.); *soḍhu-* *soḍhar-* and *soḍha-* in the classical language, where the Vedic presents only formations with *ā*: *sāḍhar-* *sāḍha-* *sāḍhwā* and infinitive *sāḍhyai* (Māitrāyaṇī Samhitā I. 6. 3; Schröder, Einleitung p. xiv). If we consider the fact that the forms with *o* from the root *sah* are late, and that *sah* and *vah* are the only two roots in the language which show the final (*ṣ*)*h* preceded by short *a*, it will have to be admitted that the late *sōḍhar*, etc. are formed after the analogy of *voḍhar*, etc. This leaves us with the old forms *voḍhar* and *sāḍhar*. The first itself would offer no difficulty; the formations in which the palatal sibilant has dropped are all of them such as require *ṣ*: *voḍhar* is *vector*; *voḍhu-* is *vectu-*; it could then be readily assumed that Sk. \**vṣṣh-tar*, \**vṣṣh-tu* was changed to \**vōṣh-tar* \**voṣh-tu* just as \**sōṣ-daṣa* was referred to \**ṣvṣ-daṣa* above, i. e. the result of the labializing influence of *v* upon a following vowel; but an explanation that fits the root *vṣ(ṣ)h* must also fit the root *sṣ(ṣ)h*; it is therefore more probable that in both these cases the historical *ṣ* of the formation did not enter into the result; that *voḍhar* and *voḍhu-*

<sup>1</sup> It may be permissible to recall the fact that in the earliest language there are some points of contact between the declensions of *as*-stems and those of stems in final *t*; so when a vocative *haviṣmas* stands related to a dative *haviṣmata*; a vocative *vidvas* to *vidvadbhis*, *vidvātsu*, etc. Compare also the remark of Brugman in KZ. xxiv, 21 fg. on *uṣād-bhis*: *uṣās-*, and *mād-bhis*: *mās-*, and Whitney, Sanskrit Grammar § 168.

are merely \**vāḍhar* and \**vāḍhu-* with their vowel labialized.<sup>1</sup> At any rate there is a gain in the recognition that the *ō* of *vāḍhar* and analogically that of *sāḍhar* etc. is long monophthongal *ō*; an explanation as \**vauḍhar* is devoid of all foundation.

The main purpose of this paper is the explanation of the change of final *as* into *ō*. The *ō* before sonant consonants is not a diphthong; it is long *ō*, the result of short *ō* plus the voice of the sonant sibilant which has fallen out, but has left its traces in the lengthening of the preceding short vowel. *Short Indo-European ō is then not entirely dead upon Indian ground any more than short I. E. ě; both have escaped into certain long ē and ȳ; the euphonic change in a complex aṣvō dravati differs from that of a complex ē-dhi only in the quality of the short vowel which has preceded the change; \*aṣvōz dravati is the immediate historic precursor of aṣvō dravati, precisely as \*ēz-dhi is of ē-dhi.*<sup>2</sup> It needs scarcely

<sup>1</sup> With this *sāḍhar* for *sēḍhar* we may compare the cases in which Bollsensen (Zeitschr. d. deutsch. morg. Gesellschaft XXII 574) assumes the change of final *as* before sonants into *ā*; especially *sahāvat* by the side of *sahovat*; only that these are anything but archaic; they are made after all historical antecedents of *a* (*ǣ* and *ō*) had been totally forgotten; this it is hoped will be shown below sufficiently.

<sup>2</sup> Weber in Kuhn und Schleicher's Beitrage III 398, explains the change of final *as* to *ō* through the intermediate stage of a change into *ar*. He bases this view to a considerable extent upon a series of words in a single liturgical passage in the TS. and the Kāthaka-Saṁhitā, where a number of such cases actually do appear: *jinvār, ugrār, bhīmār, tveṣār, grūtār, bhūtār* and *pūtār* (with a variant *pūrtir*); the last only in the KS. In addition also a doubtful dative plural: *adbhyar* KS. XI 10; see Beitrage III 390-2. According to this all final *s*'s preceded by a vowel were once changed to *r*, and this *r* underwent still further changes in the case of *ās*. Not only are these few forms in *ar* rather to be explained as artificial imitations of stems ending in etymological *ar*: *ahar* (cf. *aharpati*), *ūdhar uṣar* etc. but there is room for the suspicion that on the contrary all final *s*'s preceded by vowels and followed by sonants may have originally changed to the sonant sibilant *z* which fell out, and, when followed by a consonant compensated the preceding vowel. As a remnant of this method we may perhaps regard the treatment of final *s* when followed by *r* in cases like *agnī rohati* etc. So also the Prakrit nominatives of *i-* and *ū-* stems: *aggi, bandhū* etc., which were once used probably only before sonant consonants, but afterwards became general like *ō* for final *as* (*vaccho = vrkṣas*). The Pāli nominatives (*aggi, bhikkhu*) on the other hand are the forms before vowels extended in their use in the same way. In that case it becomes necessary to assume for Sanskrit, that the change of final etymological *r* before sonants to *s* before surds furnished the basis upon which all final *s* became *r* before sonants; *i. e.* as *pītur* appears in the form *pītur* before surds, so conversely *cakṣus* appears as *cakṣur* before sonants; while of the old forms before



to be pointed out that the same appearance of *ē* and *ō* is now almost universally regarded as the cause of the changing initials in form-couplets, whose initial belongs to the back-guttural series: *hānti* : *ghānds* ; *hāras* to *gharmās* ; *ca* : *katarās*, etc.

Of the difficulties with which this opinion is fraught no one is better aware than I am ; I regard them however as by no means insurmountable. Above all, final *ās* is not everywhere equal to I. E. *ōs* ; very often it is equal to I. E. *ēs*, and in such cases *ē* would be expected as the product of the short vowel and the voice of the sibilant ; e. g. *\*agnayē dahanti* for *\*agnayēs dahanti*, instead of *agnayō dahanti*, etc. That this state of things did once actually exist in India appears to be rendered strongly probable by certain dialectic phenomena ; instead of pointing out right here the cases in dialects in which final *as* turns into *ē*, I cite a passage out of Weber's article in Kuhn und Schleicher's Beitrage III 385 fg. entitled : 'Final *as* before Sonants in Sanskrit.' He is combating the native theory (accepted also by Lassen and Bopp) according to which the change of *as* into *ō* is explained as due to a change of the *s* into *r* and then of *r* into *u*, which combines with the preceding *ā* into the diphthong *ō*. He says : 'In various Prākṛit dialects, namely, partly in the inscriptions of Piadasi in the dialect of Dhauli and Bābhra, and especially in the Māgadhī- dialect, there appears not *ō* but *ē* in the place of final *ās*, and in this *ē* an *u* can by no possibility be found inherent, nor can this be regarded as the result of weakening from *ō* ; on the contrary its direct derivation from *ās* as a common basis (for both *ē* and *ō*) must be kept in view as the starting-point.' This passage written in 1863 sounds almost prophetic. In those days of the undisturbed rule of Indo-European *ā* in Sanskrit an explanation of this variation, which is based upon the fact that final *ās* corresponds partly to European *ōs* and partly to European *ēs*, could not suggest itself.

The reason why the historical difference between *açvō drāvati* and *\*agnayē dahanti*, which latter we are led to reconstruct, was

sonants: *\*cakṣu* (before vowels) and *cakṣū* (before consonants), only the latter has survived before *r* of the following word. Possibly the isolated nominative sg. *bhūmi* in RV. IX 61, 10: *uccā te jātām āndhaso divi śād bhūmy* (pada: *bhūmīḥ*) ā dade: 'was oben deinem saft entsprang im himmel, hat die erd' erlangt' (Grassman); cf. Benfey, Vollständige Grammatik p. 204, note 8, may contain the more primitive sandhi in question ; cf. however Pāraskara Gṛhyasūtra I 16, 17: *veda te bhūmi hrdayaṁ* 'the earth knows thy heart.' The assumption of a neuter stem *bhūmi* offers a simpler explanation than that of the padakāra.

given up, is clear. As soon as the difference between *\*ačvōs* and *\*agnayēs* before surds was wiped out, there was lost with it all *raison d'être* for a distinction between *ačvō* and *\*agnayē* before sonants; as soon as short *ā* had absorbed within itself both short *ē* and short *ō* the distinction between *ačvō* and *\*agnayē* must disappear and one or the other, probably the fittest of the two, will survive. The number of parallel processes which could be brought up from various quarters of I. E. grammar to show how again and again an original historical difference perished, as soon as the cause which had given it life had passed away, is well nigh infinite. One need but remember the almost complete wiping away of the distinction between weak and strong forms in the Greek perfect, which was lost no doubt in the main because the corresponding accentual difference had succumbed to the leveling recessive or enclitic accentuation. And in India, unless we are disposed to give up the attempt to account for the change between palatals and gutturals of the back-guttural series, the same absorption of *ē* and *ō* into *ā*, with which we are dealing here, has blurred the regular methods of interchange between *c* and *k*, *g* and *j*, *gh* and *h*, so that scanty remnants afford but the merest hint at the cause which once governed the interchange of these consonants.

I have said that of the two types *ačvō* and *\*agnayē* the fittest would probably survive; for the language of the Veda and its lineal descendant the Sanskrit *ačvō* may indeed be called so: for it is numerically far ahead of its rival. Without laying *too much* stress on numerical relations in such cases—for often a poorly represented formation gradually insinuates itself into the favor of a language at the expense of a prevailing one—it may be well to point out the fact that the cases in which final *as* represents *ōs* are much more numerous than those in which it represents *ēs*; for the nominal formations I employ the excellent table of Lanman in the appendix to his book on 'Noun-inflexion in the Veda.'

The nominatives sg. masc of *a*-stems alone occur 10,071 times, making about one-ninth of all nominal formations in the RV.; there are 1911 genitives and ablatives of consonantal stems masc. fem. and neuter; moreover 1421 nominatives and accusatives of neuter *as*-stems; these 13,500 cases are certain representatives of *ōs*; against this number the forms with *as* = *ēs* appear 3538 times in the nominatives and vocatives plural masc. of consonantal stems and of *i*-, *u*-, and *ṛ*-stems; further the nominatives and vocatives plural fem. of the same stems amount to 1037; the vocatives singular of

*as*- stems according to the equation  $\text{Satyā-çravas} = \text{'Eτεó-χλε}(F)\varepsilon\varsigma^1$  (Benfey, Über die Entstehung des indogermanischen Vocativs, p. 53) add 190 times, making in all 4765 forms, or a little over one-third the number of cases in which *as* = *ōs*. From the inflected forms of the verb only second persons singular with the secondary ending *s* bear on the question. In thematic forms like *abharas* =  $\text{ἄφηρες}$ , *druhas*, *dvarṭayas*, etc., and subjunctives of non-thematic stems like *dsas*, *taḍnas*, *vádhiṣas*, *jalgulas*, etc. the final *as* is also = *ēs*; in all they are 478 forms (gained by count from Avery's lists in the Journal of the American Oriental Society X. 232 fg.). By adding these to the nominal forms in *ēs* we obtain about 5250 *ēs*- forms against 13,500 *ōs*- forms; exactly 7 *ēs*- forms to 18 *ōs*- forms. This relation will not be affected materially one way or another by forms outside the inflections, or by some error which may have crept in. That this numerical superiority of the *ōs*- forms gives a fair picture of the corresponding superiority of the forms in *ō* before sonant consonants, and that this may have been the deciding factor in the question as to which should survive, is very evident. When this disappearance of *ē* for *as* began it is hard to say. On the one hand there are facts that would seem to prove that the process began in Aryan times, when the Iranian and Indian languages lived together; it is a *fait accompli* in the Samhitās of the Veda, and we find there traces of a substitution of *ō* for *as* even before surds, as in Pāli and Prākṛit (Weber in Kuhn und Schleicher's Beitræge III. p. 401, note); in most of the Prākṛit and Pāli dialects *ō* is simply substituted for *as* without reference to the character of the following sound; the Iranian has on the one hand carried the process of spreading the *ō*- forms farther than the Prākṛit and Pāli, namely into noun-composition; for in the Gāthic compounds, whose first part ends in *ō*, these first nouns are all *a*-stems, and there is no reason to doubt that the very frequent *ō* of their nominatives became so firmly associated with these stems, as to creep even into compounds (Bartholomæ, Die Gāthās, p. 81); on the other hand the *as* has survived before enclitics: genitive *manāñhō*, but *manāñhaç-ca*, etc. But there are facts also which appear to prove that the *ō* accomplished the task of crowding out the *ē* separately in the various dialects of the Indo-Iranian languages; such are the victory of *ē* over *ō* in Magadha, and the distinct traces of *ē* by the side of *ō* in Iran, which will be pointed out below.

Final *ē* for *as* in India is well authenticated. If we had only the rule of the Prākṛit grammarians for the Māgadhi-dialect, that would

<sup>1</sup> The question whether *satyā*- is or is not identical with *ἔτεο*- (cf. the Cypriot *'EτεFάνδρω*) does not concern us here.

suffice in spite of the evidently secondary and conventional form in which it appears there. Hemacandra (IV. 287) teaches that in the singular masculine *e* takes the place of *a*; *eṣa puruṣaḥ* becomes *eṣe puliṣe*, etc. Vararuci, *Prākṛta- prakāṣa* XI. 10 says that final *as* of nouns is changed to *e* or *i*; even *a* is permitted optionally. Practically the substitution of *e* for *o* in the Māgadhi-dialect goes farther than what is warranted even by the broader statement of Vararuci. Hemacandra seems to restrict himself in his sūtra to pointing out the most striking case of the change of *o* into *e*, namely the nominative; for under the examples illustrating his sūtra he gives strangely enough the sentence *karemi bhaṁte*, which is translated by *karomi bhavantaḥ*,<sup>1</sup> where both forms are not covered by his rule, and *karemi* for *karomi* not even by Vararuci's; practically, as far as I have been able to find out, probably all kinds of formative *o* can be replaced by *e*; at any rate an extension of *e* for *o* beyond the precincts of *o* = *as* may be observed. We shall scarcely be disposed to believe that this *e* is the result of a phonetic metamorphosis from *o*; still less that the grammarians have by an arbitrary dictate engrafted this rule upon the dialect. The case in which any broader phenomenon of Hindu language is a figment of their grammarians, not based upon some understructure of fact, even if a frail one, has still to be brought forward; on the other hand many phenomena of their languages bear witness to the fact, that data of limited extent, especially in the phonetic life of an Indian language, have often been arbitrarily enlarged, and have had a scope given them which originally did not belong to them. For this reason alone the *e* of the Māgadhi-dialect cannot be done away with, even if it does occur in all sorts of places; of course the inscriptional testimony is welcome. In the Aṣoka- inscriptions *e.g.* of Dhauli, which lies in the old district of Magadha (South Bihar) final *as* does really appear as *e* in genuine language. In the third edict of Piadasi he is styled 'devānāṁ *pie* piadasi,' where the same edict in Girnar in Guzerat shows final *o*: 'devānāṁ *pīo*' (cf. Journal Asiatique, seventh series, Vol. XV. p. 492); or in the fourth edict we have in Dhauli the sentence: 'putā ca *piadasine*

<sup>1</sup> So at least according to Weber in Kuhn und Schleicher's *Beitraege* II 362. Pischel, Hemacandra, Vol. I, p. 144 (text) reads *karemi bhaṁte* = *karomi bhadante*; in the translation, Vol. II, p. 168, he reads *kalemi bhaṁte* = *karomi bhadanta*, and describes *bhadanta* as a vocative singular. In any case both *kalemi* (*karemi*) and *bhaṁte*, whether = *bhavantaḥ* or *bhadanta*, both exhibit a special fondness for *e*, which seems to be an extension from the regular *e* = *as*.

*lajine* pavadhayisaṃti dhammacalanam'; in the same edict in Girnar: 'putrā ca potrā ca prapotrā ca devānām priyasa *priadasino rāno* vadhayisaṃti idaṃ dhammacalanam' (ibid. Vol. XVI. p. 219); final *e* for *as* is here a living fact,<sup>1</sup> and its explanation together with that of the usual *o* out of original *ēs* and *ōs* is certainly not made improbable by anything else that has been brought to bear on the question from another direction.

The form in which noun-stems in *as* in Sanskrit appear before the *bh*-case-endings has deviated from the original. For here as in the case of final *as* we must be guided by the vocalism of Europe; this is unequivocal; Greek *s*-stems exhibit the *os* only in the nom. acc. voc. neuter; everywhere else the stem ends in *εs*: *μενες*- etc.; in this way also the archaic *bh*-cases are declined; we find in Homer: *ἐρέβess-φιν*, *στῆθεss-φιν*, *κράτεss-φι*, *ὄρεss-φι(ν)*; *ὄχεss-φιν*; this latter still more archaically *ἔχεss-φιν* *ἄρμασσιν* in a gloss of Hesychius. According to this the *bh*-cases in Sanskrit ought to be preceded by long *ē*: *\*manē-bhis* for *\*manēz-bhis*, etc., instead of *manō-bhis*. Of such forms there is no trace even in the Veda; indeed the value of a few isolated forms of this kind would be small, as they would most naturally be explained as due to the corresponding cases of the *a*-declension (like *devebhis* RV.); so the Pāli *as*-stems do actually make *manebhi*, etc., but there is room here for the suspicion that this is an instrumental from an *a*-stem *mana-* (cf. acc. *manaṃ*), although it may indeed be urged with equal plausibility that just such cases like *manebhi* = *\*manēz-bhis*, coinciding formally with the *bh*-cases of *a*-declensions gave rise to forms like *manaṃ*, etc. But in the Veda the *as* of *s*-stems undergoes the same treatment as the final *as* before sonant consonants of a following word. Here however the Zend has preserved the historical form most strikingly: *raocē-bis*, *raocē-byō* from *raocañh*; *avēbis* from *avañh*; *açē-bis* from *açañh*; *maçē-bis* from *maçañh*, etc. with perfect regularity both in the Gāthā-dialect (whose testimony alone would be doubtful on account of its well-known partiality to this long *ē*)

<sup>1</sup> Possibly those vexing accusatives plural in Pāli: *yuvāṇe*: stem *yuvan* and in the *a*-declension: *dhamme*: stem *dhamma* may be the last traces of a change of *as* into *e*. It would, to be sure, be necessary to assume that the *e* strayed from the nominative and accusative plur. of consonantal stems into the *a*-stems; and that the *e* of the consonantal stems themselves afterwards succumbed almost entirely to the inroads of *o*. The *e* in a few other isolated cases like *svē*, *suve* = *cvas*, *pure* = *purās*, etc. (E. Kuhn, Beiträge zur Pāli-Grammatik, p. 58) are also best accounted for in this manner, cf. also E. Kuhn in KZ. XXIV. 100, where the aorist-forms *apacise*, etc., are explained as equal to *apacisās*, etc.

and in the later Avestan. The position of this  $\bar{e}$  in the language points with perfect clearness to a genesis from a short vowel  $\acute{e}$  (Justi's and Hübschmann's  $e$ ), and through this  $e$  to a connection with simple Sanskrit  $a$ . The nexus with the short  $e$  is clear from the frequent Gāthic lengthening of it to  $\bar{e}$ :  $apēma$  for  $apema$ ;  $spēnista$ , cf.  $spenta$ ;  $kehrpēm$ :  $kehrpem$ , etc., further its alphabetic sign shows it to be nothing but a lengthening from  $e$  by the usual additional stroke; both  $e$  and  $\bar{e}$  stand therefore in the directest relation to Sk.  $\bar{a}$ ; long  $\bar{e}$  moreover is often directly the representative of Sk.  $\bar{a}$  as the result of secondary lengthening; here the intermediate stage with  $\acute{e}$  is perhaps lost:  $qēnghaiti$ = $qam̐sati$ ; Gāthic  $\bar{e}mavan̐t$ =later Avestan  $amavan̐t$ =Sk.  $amavant$ ; cf. Hübschmann, KZ. XXIV. 328 and 333. On the other hand the long  $\bar{e}$  of these forms just as clearly shows affinity in character with that long  $\bar{o}$ , which stands for final  $as$ , and is actually seen to interchange with it in the Gāthās, and like it to vary with  $as$ ; for when we have forms  $manē$  for  $mānō$ ;  $vacē$  for  $vacō$ ,  $yē$ ,  $kē$ , (the latter  $kas$  when a particle  $nā$  follows) we are bound to recognize here that stage in which final  $\bar{o}s$  and  $\bar{e}s$  are still both in existence, although the law according to which these ought to supplement one another has been necessarily wiped out along with the difference between  $\acute{e}$  and  $\bar{o}$ ; the  $\bar{e}$  of  $raocēbis$  is the same as the final  $\bar{e}$  in the Gāthā-dialect, and has escaped that leveling process which has in the later Avestan substituted final  $\bar{o}$  for  $\bar{e}$  everywhere at the end of a word by virtue of its more protected position, unlike its Indian counterpart  $rocobhis$ . It is interesting and fortunate that there is no possibility of explaining  $raocēbis$ , etc., as analogical formations, because Zend has, unlike its sisters in India, separate forms for monophthongal  $\bar{e}$  and  $\bar{o}$  clearly differentiated from the  $i$ - and  $u$ - diphthongs. While an Indian  $*rocebhis$  would be subject to the suspicion that it had in some way become contaminated by the  $a$ - declension, such an eventuality is here ward off by  $daēvaēibyō$ ,  $arethaēibyō$ , etc. The Zend has therefore in some respects presented the most effective resistance to the process of decay which has set in upon final  $as$  in the entire Aryan family.

There remains an exception in Sanskrit, contained in the latter rule: final  $as$  before  $\bar{a}$  changes to  $o$  and the initial  $a$  following is dropped; the difficulty lies here in the fact that a syllable short by nature and position is lengthened for no apparent reason. It is believed that upon sifting this peculiar rule carefully, *the last but distinct trace of final  $\bar{e}s$  will be found on Vedic ground.* In the

later language not only final *o* from *as* produces the elision of initial *a*, but any other *o* also, and what is more, final *e* produces the same effect. To find that the euphonic rule for final *o* resulting from *as* has attracted to itself the rest of the *o* need not occasion surprise; for final *o* not the result of *as* are indeed rare throughout the language; there are scarcely any worth mentioning except those of the vocative of *u*-stems; cf. Whitney, § 134. In the RV. there occur a little over 500 such in all positions, and it is not worth while to count the cases in which they actually occur before *a*. Remembering that there are, according to the count above of inflectional forms alone, 18,750 forms in final *as*, not including common pronouns like *nas*, *vas*, adverbs in *as*, etc., it will be safe to say that the cases of direct diphthongal *o* are to those of *o=as* as 1:40; it is clear then that whatever law might gain ground for the majority would in all probability, either in the actual life of the language or in the grammatical handling of it, become rule for the small minority. Quite different is it with regard to final *e*. There is no final *e* alive in the later language which is other than a diphthong, or which is the result of a euphonic process, or which appears to stand in any nexus with final *as*. It is then a matter of just surprise to find it in the same category with *o*; yet as far as the later language goes it might be urged with a sufficient show of reason that the same conventionalism which has *e. g.* established the rule for the doubling of all final *n* under certain circumstances (Whitney, § 210) without reference to their antecedents, might also impose upon the diphthong *e* all the *sandhi*-qualities of what is to the Hindu grammarian always the *diphthong o*.

Turning to the Vedic language we find the complexion of the two rules we are dealing with changed materially. Final *as* is still written *o* before *a*, and we find this *o* again in juxtaposition with final *e*; for in the Veda also the initial *ā* of a following word is elided after *o* and *e*. Only with this difference, that here the elision is the exception instead of the rule. For the RV. Bollensen, *Zeitschr. d. deutschen morg. Gesellschaft* XXXV 467, offers as the result of an exact count the statement that of 480 cases in which the elision is written only 21 are warranted by the metre; on the other hand there occur also a few cases in which elision, though not written, actually does take place (ibid. 466); in the Sāma-Veda the 92 instances in which the elision is written are all to be restored; Whitney in a note to AV. *Prāticākhyā* III, 54 states that the AV.

omits the *a* in writing in about one-third of the cases in which it is preceded by *e* or *o*; in actual pronunciation it is omitted only about one-fifth the number of its occurrences. Schroeder, *Māitrāyaṇī-Saṁhitā*, Introduction, p. xxix, finds that *a* after *e* and *o* is partly elided and partly left to remain. It will be seen that the Vedic phenomena present a very different situation; one which makes it impossible to explain the elision after *e* as a mere analogical process, an imitation for symmetry's sake of the properties of a parallel sound, the *o*; because we are dealing here with an ill-regulated tendency, itself too vague and undefined in order to furnish the firm foundation of facts likely to exercise the necessary attraction. It will be necessary then to recognize the fact that the elision after *e* just as that after *o* stands on its own basis, and to explain how two sounds of a character in general so widely different show the same tendency in the earlier language; the fact that this tendency has expanded itself into a law for the later language need concern us no longer. I remark here that there is nothing in the character of the sound following the *a* which either brings about or prevents the elision; Pāṇini indeed (VI 115-6) formulates the results of observation of the cases in which the elision actually occurs into rules; but these show that there is no organic nexus between the process of elision and the sound which follows the *a*; his rules, moreover, do not bring in all the kinds of sounds before which *a* is elided; cf. Benfey, Introduction to the Sāma-Veda, p. xxxi.

The organic parallelism between *e* and *o* in early times is proved by a still more striking fact. Adalbert Kuhn has shown in his acute investigations on Vedic language as reflected by metrical conditions, that in the RV. final *e* and *o* before vowels are themselves short vowels;<sup>1</sup> he draws this conclusion from those parts of the pādas of the most common metres whose laws of quantity are the most transparent and subject to almost no exception, namely the last four syllables of *jagati* and the last three of *triṣṭubh*; for these he rightly claims an almost perfect law of quantity, varied only by the varying quantity of the last syllable, the syllaba anceps; for *jagati*: dijambus or second paeon (◡—◡◡); for *triṣṭubh*: bacchius or amphibrach (◡—◡).

I have myself, in order to gain data for more precise statements, scanned all those hymns of Maṇḍala II, III, IV and V, which are composed in *triṣṭubh*, *jagati*, or both; omitting the hymns in which

<sup>1</sup> See especially Kuhn and Schleicher's *Beiträge* III, 118 fg.



these metres appear mixed or interchanging with 8-syllable metres. They are hymns II, 1-4, 9, 10, 12-19, 21, 23-31, 33-40, 42; III, 1-7, 14, 15, 17-20, 26, 30-36, 38, 39, 43, 46-50, 54-61; IV, 2-6, 11-14, 16-29, 33-36, 38, 39-45, 50, 51, 54, 58; V, 1, 3, 4, 8, 11, 12, 15, 29-34, 36, 37, 42-49, 54, 55, 57-60, 62, 63, 69, 76, 77, 80, 81, 85; containing in all 5808 pādas; of which 154 refuse to obey the law for final cadence (◡—◡◡ for jagatī; ◡—◡ for triṣṭubh) as long as *e* and *o* are regarded as long before *a*; as soon however as it is admitted with Kuhn that the *e* and *o* are short before *a* there fall aside 131 of these 154 exceptions, 102 of *o*<sup>1</sup> and 29 of *e*<sup>2</sup>, the *a* in all these cases remaining unelided. It is to be noted that none of these *e* and *o* are *pragṛhya*, and when in a single case an *e* which is *pragṛhya* occurs in the final cadence it is long.<sup>3</sup> II, 2. 4d: pāthó ná pāyúm jánasī ubhé ánu (jagatī); indeed there

<sup>1</sup> II: 1. 14a; 3. 3abc; 4. 9a; 9. 1d, 6b; 10. 5c; 14. 11d; 16. 5c; 18. 3d; 23. 4b, 14d, 15a, 18d; 27. 1d, 5a; 33. 5c; 34. 12d; 36. 3c; 38. 5b, 10b; 39. 5d, 8b; 42. 2b. III: 1. 12d; 4. 2b, 11a; 5. 9a; 7. 2a; 14. 1cd, 5d; 30. 19c, 20d; 31. 7d, 11b; 35. 1bc, 5b; 36. 6d; 46. 2b; 48. 3c; 56. 6b; 57. 1d; 58. 4d. IV: 2. 2a, 18a; 3. 6a; 4. 3c, 10a; 5. 2d, 12c, 15d; 6. 4b, 10c; 11. 6c; 13. 2a, 3b; 16. 3b, 19c; 20. 9c; 21. 4d; 23. 1c, 2b, 4a; 24. 3c; 26. 5d; 27. 5a; 33. 4c; 34. 1a; 39. 5d; 50. 1a; 58. 3b, 8b. V: 4. 2b; 8. 4c; 15. 1d; 29. 3d; 30. 11c, 13b; 31. 4c; 33. 2a, 8c; 34. 1b; 42. 5a, 15a; 43. 14b; 44. 5d; 45. 2c, 7a, 9c; 46. 4ac, 5d; 47. 4d; 49. 3c; 54. 8d; 55. 10d; 58. 3a; 76. 1b.

<sup>2</sup> II: 15. 4b; 27. 2a. III: 6. 8d; 17. 3b; 30. 2d; 32. 13a; 54. 7a. IV: 3. 4a, 11d, 15a; 4. 12a; 5. 8a; 6. 4a; 11. 1d, 4d, 6a; 33. 10b; 34. 5c, 9b, 11b; 35. 6a. V: 1. 4d, 5a; 4. 6d; 30. 12a; 31. 3c; 43. 5a; 59. 1d; 80. 2d.

<sup>3</sup> Such cases are of rare occurrence in the RV. I find only six in triṣṭubh and jagatī hymns: I, 72. 6a: Triṇ saptá yád gúhiāni tuvé (tvé) it; I, 151. 4d. gaām na dhurī úpa yuñjāthe apāḥ; VIII, 72. 3c: āvivāsan ródasi dhīśnie imé; IX, 70. 3b: ádabhiāso janúšī ubhé ánu; X, 44. 4c: ójaḥ kṛṣva sám grbhāya tuvé (tvé) ápi; X, 64. 14b: devī devāñ jánmanā yajñīye itáḥ. I find no cases of *o*; more numerous are cases of *pragṛhya ī* and *ū* in the tenth syllable of these metres: *e. g.* II, 1. 15d; 2. 5d; 27. 15d. III, 2. 2a; 34. 1d. V, 31, 6c; IX, 101. 7d, etc. It would appear then that the special quality of most of the *pragṛhya*-vowels consists in *fuller or firmer length* than that of the remaining long vowels, their quality of not combining with following vowels is accordingly merely an accessory of this special length; this appears also from their treatment in the Prātiśākhya, all of which (except Tāittiriya-Prāt.) after enumerating the *pragṛhya*-vowels, add a special rule which declares the fact they are not combinable; cf. Whitney AV. Prāt. I, 73, note III, 33 note; the terms *pragṛhya*, *pragṛhita* and *pragraha* (TS.) seem also in no way to describe the real character of these vowels, but merely to indicate that the words containing them are especially emphasized or pointed out by the *iti* of the *padakāra*. Weber, Indische Studien XIII, p. 5, translates the term by the phrase: ' (was man) hervorzuheben wünscht.'

occur in these final cadences only two other cases of *e* and *o* long before *a*; but in both of these the *a* is neither written nor read metrically: V. 29, 10<sup>b</sup>; kútsāyānyád vāriṇo yātave 'kah (p. akar); and V. 31, 3<sup>d</sup>: ví jyótisā saṁvavṛtvāt támo' vaḥ (p. avar) both in tristubh hymns;<sup>1</sup> so that there is left not one single exception to the law that final *e* and *o* are short before *a* when this *a* is not elided. If this result is accepted there remain but 23 exceptions in 5808 pādas to the law for final cadence,<sup>2</sup> and it may be worth while to observe that of these only 4 show long syllables for short in the 9th syllables of jagatī and tristubh,<sup>3</sup> the 11th syllable of jagatī is inviolably short; the remaining exceptions consist in short vowels instead of long ones in the 10th syllable; there is then no reason whatever to doubt that *e* and *o* before *ā*, when they are not *pragṛhya* and when the *a* is not elided, are short.

The parallelism in the treatment of *e* and *o*, the result of final *as*, extends still further; not only are both—though written as diphthongs—short before *a*, but both *e* and *as* appear alike as *a* before all vowels other than *a*, with just as uniformly short metrical value in the case of *e* as in the case of *a(s)*. Of course the explanation of the change of *e* into *a* as given by the Hindu grammarians, excepting the RV-Prāt., means nothing; the assumption of a change of final *e* into \**ay* and the subsequent dropping of the *y* is a purely theoretical artificiality; the manuscripts show nowhere any such intermediate stage as \**ay*. No doubt the same cause which has substituted for final *a* as written *o*, pronounced short before *ā*, and *a* short *a* before all other vowels, has brought about the short value of written *e* before *ā*, and its appearance as short *ā* before

<sup>1</sup> Other cases of this kind in syllables not belonging to the final cadences are: VI, 9, 2<sup>b</sup>; 22, 4<sup>c</sup>; 36, 2<sup>c</sup>; 50, 9<sup>d</sup>, 10<sup>c</sup>; the *e* and *o* before the elided syllable are always in the even (long) syllables of the verse.

<sup>2</sup> They are II: 1. 7<sup>d</sup>, 9<sup>c</sup>; 2. 9<sup>d</sup>; 4. 1<sup>b</sup>, 2<sup>d</sup>, 3<sup>d</sup>, 9<sup>c</sup>; 19. 3<sup>a</sup>; 28. 6<sup>a</sup>*b*; 29. 1<sup>a</sup>; 33. 14<sup>d</sup>; 35. 11<sup>b</sup>. III: 2. 5<sup>d</sup>; 46. 2<sup>d</sup>; 49. 1<sup>a</sup>. IV: 4. 1<sup>c</sup>; 16. 1<sup>b</sup>; 21. 1<sup>a</sup>. V: 33. 5<sup>a</sup>, 7<sup>a</sup>; 37. 2<sup>b</sup>; 57. 6<sup>a</sup>; most of these have been treated by Kuhn in his articles in Vols. III and IV of Kuhn und Schleicher's Beitrage.

<sup>3</sup> II, 4. 9<sup>c</sup>; suvīrāso abhimātīgāhaḥ smāt (p. abhimāti-sāhaḥ!); II, 28. 6<sup>b</sup>: énaḥ kṛtvāntam asura bhrīṇānti (Kuhn und Schleicher's Beitr. III 122); III, 49. 1<sup>a</sup>: çāṁsā mahām índ(a)ram yasmīn víçvā (ibid. 124, end); IV, 4. 1<sup>c</sup>: tṛṣṇim ānu prāsītīm druṇānó (âπ. λεγ. from √dru = √dru perhaps for \*druṇānó).

*all other vowels.*<sup>1</sup> The cases of *a* for *e* with undoubted short value, in those hymns of the IV. and V. maṇḍalas, which I have scanned, are IV: 17, 9<sup>b</sup>; 20, 10<sup>c</sup>; 34, 9<sup>a</sup>; 40, 3<sup>b</sup>; V: 1, 6<sup>d</sup>; 11, 3<sup>c</sup>; 12, 5<sup>a</sup>; 43, 10<sup>d</sup>, 14<sup>a</sup>; 49, 3<sup>b</sup>. Interesting is IV: 34, 9<sup>ab</sup>, containing both treatments of final *e* before vowels in the 9th syllable of the two tristubh pādas; both are short, preceded and followed by long syllables: yé aṣvīna yé pitārā yā ūtī | dhenúm tatakshúr ṛbhāvo yé aṣvā; cf. VI. 3, 4<sup>ab</sup> and IV. 6, 4<sup>ab</sup>.

Further, even in the evidently secondary treatment of final *as* and *e* in the Māitrāyaṇī the same persistent parallelism appears: Before all vowels other than *ā*, when these vowels are accented, final *as* and *e* when themselves unaccented change both to *ā*; otherwise this Samhitā follows the usual methods; see Schroeder, Zeitschr. d. deutschen morg. Gesellschaft xxxiii, 184, and Introduction to the Māitrāyaṇī-Samhitā p. xxviii, fg.

It will not be amiss to emphasize again the fact that in treating final *o* and *e* we are handling two different sounds, which seem to share arbitrarily the same properties so long as *e* is nothing but a diphthong; for the proof that final *o* is read short before vowels in the RV., if we resolve it, means nothing more than that final *as* changes into a short vowel before *a*; for it must be remembered that with the exception of the few vocatives, etc., in diphthongal *o*, which do not enter as a perceptible factor, this *o* can only occur before *ā*, because *as* before other vowels changes to *a*. The proof so far is as nearly a linguistic necessity as possible. The lengthening or diphthongizing of the vowel of *as* before another vowel after *s* had fallen out would be a linguistic anomaly; all reason for compensation is here wanting, because *as* before a vowel is short by nature and position. We are in fact compelled to utilize this discovery of Kuhn in order to remove this thoroughly anomalous lengthening. But again what is to be done with the diphthong *e*, which is nothing but a diphthong in the historical period? The evidently organic parallelism of its treatment with that of final *as*

<sup>1</sup> The treatment of diphthongal *o* differs slightly from that of final *as* in the RV-Samhitā. Instead of appearing as *ā* before all vowels other than *ā*, it appears in this form only before labial vowels; elsewhere it becomes *av*; and the RV-Prātiçākhyā sees in this *v* an additional extraneous element, which it designates by the name *bhugna* (II, 11); the other texts do not know this additional *v* (see AV-Prāt. III, 40, note) and it is perhaps nothing but the particle *u*. Cf. also Osthoff, Morphologische Untersuchungen IV, p. 258, note.

precludes the possibility of resorting to the doubtful principles of 'metri gratia' or perhaps 'vocalis ante vocalem corripitur.'

I believe that I have prepared the way for the following solution ;

(1) Final *ḍs* and *ḷs* (written *ḍs*) simply dropped the *s* before vowels, whether *ā* or any other vowel followed, of course without lengthening the remaining short vowel. As the Indian alphabet possessed no signs for either *ḍ* or *ḷ*, they had to put signs actually existing in their places ; before all vowels except *ā* short *a* was chosen, the sign being indeed insufficient to render the color of the vowels, but doing perfect justice to the quantity ; before short *a* the disinclination for allowing two identical short vowels to follow upon one another was probably the motive which led to another possible expedient, namely that by which the vocalic color was preserved but the quantity sacrificed in writing by employing the signs *e* and *o*<sup>1</sup> ; this I regard as the starting-point from which the remarkable juxtaposition of *e* and *o* (*as*) in euphonic rules must be explained.

(2) These *ḍ* and *ḷ*, coinciding graphically with the long and diphthongal *o* and *e*, ended by attracting them to their own condition, so that all *o* and *e*, without reference to their origin, were pronounced short before *ā* ; but also the other vowels, which to be sure would occur almost only after *e*, were drawn into this rule, so that the shortening of *e* and *o* took place before all vowels, *i. e.*, all final *e* (except the *pragṛhya*) were subjected to a treatment precisely identical with that of final *ḷs* ; and all final *o* to a treatment identical with that of final *ḍs* ; this is the state which we found in the final cadences of the *pādas* investigated *without one single real exception*. It may be added as a valuable verification of what has been claimed here, namely, that an explanation on the principle 'vocalis ante vocalem corripitur' would be totally insufficient, that in a few instances the short values occur before consonants also ; Kuhn und Schleicher's *Beitraege* III, 119 and 454.

(3) Before the period from which our Vedic material dates the final *ḍ* (written *ḍ* !<sup>1</sup>) for *ḍs* had also absorbed the final *ḷ* (written *ḷ* !<sup>1</sup>) for *ḷs*, precisely as in the case of final long *ō* and *ē*, which were the result of compensatory lengthening before sonant consonants ; so that only those *e* were left which could preserve their independence from the fact that they occurred also in other connections

<sup>1</sup> Jacobi KZ. XXVI. 320 claims that final *e* and *o* in the oldest forms of Jaina-prākṛit are either long or short. Whether any historical meaning is to be attached to this fact it will be possible to see only after his promised edition of the *Ācārāṅga Sūtra* has appeared.

than merely before initial vowels, namely the diphthongal *e*, which had been drawn secondarily into the treatment as short vowels; so that we would have the last vestige of final *ēs* on Vedic and Sanskrit ground in the short value of *e* in the Veda, and also in the sporadic elision of the initial *a* following.

(4) I have thus far called the vanishing of initial *a* by the term which for the later language is well and expressive enough, namely elision. That it is however in reality not elision is clearly enough to be recognized from the fact that the accentuation which results after the *a* has disappeared is one which takes account of the *a*; the tone of the *e* and *o* that is left shows that the *a* has united with the *e* and *o*. Two peculiarities are then connected with this phenomenon, which seem a strong support to the solution as proposed thus far: (1) That *e* and *o*, when combining with following vowels do not resolve themselves into semiconsonantal groups (*ay*, *av*), as might be expected if they were diphthongs, and as actually is the case in internal combination (*nay-ati*, *bhav-ati*). (2) That the combination occurs so sparingly in the RV. The first difficulty falls aside because *e* and *o* are, as has been sufficiently shown, not diphthongal, but short *ĕ* and *ō*; *the law according to which these combine with following ā then lies before us; short ĕ and ō combine with following ā to long ē and ō, subject to the same accentual laws for the result as other combinations of two short vowels; cf. Whitney, Sk. Grammar, § 135 and 128.* This appears with uncontrovertible certainty in the two cases RV. V. 29, 10<sup>b</sup> and V. 31, 3<sup>a</sup>, cited above (p. 17) where following *ā* is elided; these being in addition to the solitary *pragr̥hya*-case II. 2, 4<sup>a</sup>, the only ones in the final cadences of 5808 pādas in which final *e* or *o* are long before vowels. Second, the sporadic occurrence of the union of these short *ĕ* and *ō* in the Vedas is simply due to the fact that *in both cases a euphonic process has preceded, and the hiatus which is the result of sandhi is, as is well known, regularly allowed to remain, the second contraction being of rarer occurrence; cf. Whitney, Skr. Grammar, § 176, b; Weber, Kuhn und Schleicher's Beitrage III, 402; Kuhn, ibid. IV, 199 and 211; Roth KZ. XXVI, 50.* To be sure with a vast difference in the chronology of the hiatus: hat between *ō* and *ā* is made before our very eyes; that between *ĕ* and *ā* appears as the last faint reflex of final *ēs*, kept alive only by the fortunate fact that this *ēs*, which became *ĕ* before vowels, but was written *ē* before *ā* attracted to itself by analogy the diphthongal *e*-sounds which were not liable to succumb to the inroads of the stronger sister-sound *ō*.

A short review of the euphonic rules will not be amiss :

(1) Explanation of any kind becomes possible only if we operate with final *ṛs* and *ḍs*.

(2) These were once represented respectively as final long *ē* and *ō* only before sonant *consonants* ; a lengthening for compensation before a *vowel* would be a linguistic anomaly.

(3) Long *ē* succumbed to its stronger sister-sound *ō* as soon as the cause of their original differentiation had been removed by the merging of both *ṛs* and *ḍs* into *ṛs* ; the opposite process appears dialectically in India in the Magadhese district ; *ē* is retained undisturbed in the *bh*-cases of *es*-stems in Zend ; in the Gāthās final *ē* is also beheld still struggling for the supremacy with final *ō* ; in the later Avestan it has also given way to *ō*.

(4) Before all vowels final *ṛs* and *ḍs* originally merely gave up the *s*, becoming *ṛ* and *ḍ* ; on account of the insufficiency of the Indian alphabets *ṛ* and *ḍ* had to be rendered by other characters ; in general they gave up their qualitative difference and became *ā* ; before *ā* itself the signs for the long vowels and diphthongs were resorted to, making possible the retention of the *quality* or color of the vowels in writing ; the short *quantity* moreover was retained perfectly by tradition in the metre.

(5) These *ṛ* and *ḍ* being written with the same characters as long and diphthongal *e* and *o* succeeded in attracting all of these excepting the *pragṛhya* to their own treatment before *ā* ; further, the treatment of *ṛs* and *ḍs* as *ā* before all other vowels was also extended to all other *e* and *o* again excepting the *pragṛhya*.

(6) The so-called elision of *ā* after *ṛ* and *ḍ* in the RV., etc., is in reality a combination of each of these sounds with *ā*, the result being long *ē* and *ō* with regular accentuation for the combination of two short vowels ; the sporadic character of the combination is due to the fact that their hiatus is not primary but secondary, in which cases it is usually left to remain.

(7) Finally it may be right to emphasize that the characters usually transcribed by *e* and *o* cover three couplets of sounds ; (a) long monophthongal *ē* and *ō* ; (b) respectively an *i* and *u*-diphthong ; (c) short *ē* and *ō*.

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